



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.9701
Job Sheet 165730



Part No: 646.9701

Job Qty: 3 ea

Part Name: Cutter Sub Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/31/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV D2 SHEET 1 IPP REV:A 12.08.13 NEW ISSUE DD VERF:JFS IPP REV :B AS PER REV D 16-03-07 JLM VERIFIED BY:JFS

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
646.9701 Cutter Sub Assembly	DWG REV D2 SHEET 1 IPP REV:A 12.08.13 NEW ISSUE DD VERF:JFS IPP REV :B AS PER REV D 16-03-07 JLM VERIFIED BY:JFS		0.000	
646.9710 Body	DWG REV D2 SHEETS 2, 3, 4 IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD		0.000	
646.9711 Blade	DWG REV D2 SHEET 5 IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD		0.000	
MS21042L08 Nut			0.000	
MS27039-08-19 Screw			0.000	
NAS1149FN832P Washer			0.000	

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	3 Ea	10/30/17	0.00	0.00	Start up container	
110	Packaging	3 pcs	10/30/17	0.00	0.00	Packaging1	
120	Small Fab	3 pcs	10/31/17	0.00	1.44	Small Fab	
130	QC	3 pcs	10/31/17	0.00	0.00	QC5	
140	Packaging	3 pcs	10/31/17	0.00	0.00	Packaging3	
150	QC21-SA	3 Ea	10/31/17	0.00	0.00	QC21	DEC 15 2017

Part Op 120 - Assemble as per dwg and apply loctite 598 on all faying surfaces per note . A/R RTV LOCTITE 598:

Descriptions: exp. date:

140 - ***IDENTIFY AS PER IAW MPP-120***

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	646.9710	3	0	0	0
	646.9711	6	0	0	0
	MS21042L08	18	0	0	0
	MS27039-08-19	18	0	0	0
	NAS1149FN832P	36	0	0	0

Part Specifications

DART
AEROSPACE
S019169



Cutter Sub Assembly

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

PART NO:
Revision:
Operation:
Change No:

646.9701

Start up Operation

Mfg Date: 12/08/17
Job No: 165730

Specifications could not be found.

Plex 10/2/17 1:07 PM Dart.lajeunesse.marie

Work Order ID 165730

Monday, August 28, 2017 12:56:01 PM

165730

Page 1

Item ID: 646.9701 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Cutter Sub Assembly

Start Date: 9/22/2017 Start Qty: 3.00 ***3*** Cust Item ID:
Required Date: 9/27/2017 Req'd Qty: 3.00 ***3*** Customer:

Reference:

DAS
21
9-89**AUG 30 2017**

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.9700	REV D2

110 Pick Kit 0.00

110

Packaging Memo 0.00
Packaging

120 0.00

120

Small Fab Memo 0.55
Small Fab Assemble as per dwg and apply loctite 598 on all faying surfaces per note .
A/R RTV LOCTITE 598: _____
exp. date: _____

130 QC5- Inspect part completeness to step on W/O 0.00

130

QC Memo 0.06
Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						

Page 2

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Item ID: 646.9701

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Cutter Sub Assembly

Start Date: 9/22/2017 **Start Qty:** 3.00 ***3***

Cust Item ID:

Required Date: 9/27/2017 Req'd Qty: 3.00 *3*

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID**Tool #****Plan
Code**

Accept Qty

Reject
QtyReject
Number

**Insp.
Stamp**

140

Identify as per dwg & Stock Location: _____

0.00

140

Packaging

Memo

0.03

Packaging

IDENTIFY AS PER IAW MPP-120

150

QC21- Final Inspection - Work Order Release

0.00

150

QC

Memo

0.30

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Picklist Print

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Page 1

Work Order ID: 165730

165730

Parent Item: 646.9701

646 9701

Parent Item Name: Cutter Sub Assembly

Start Date: 9/22/2017

Required Date: 9/27/2017

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP REV:A 12.08.13 NEW ISSUE DD VERF:JFS
:B AS PER REV D 16-03-07 JLM VERIFIED BY:JFS

IPP REV

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
646.9710		Manufactured	No			110	Each	0.0000	1	3			
646 9710									**				
Body													
646.9711		Manufactured	No			110	Each	0.0000	2	6			
646 9711									**				
Blade													
MS27039-08-19		Purchased	No			110	Each	128.0000	6	18			
MS27039-08-19									**				
Screw													

Location

Loc Qty

Loc Code

GA
m135948
m137178
m138237
ST277
m138207

127
26
3
98
1
1

NAS1149FN832P

Purchased

No

110

Each

5,437.000

12

36

NAS1149FN832P

Washer

Location

Loc Qty

Loc Code

GA
M137820
M138336
ST263
M138336

2967
467
2500
2470
2470

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
Root Cause				FAULT CATEGORY																					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐															
OTHER : ☐																									

Picklist Print

Page 2

Monday, August 28, 2017 12:56:04 PM

Work Order ID: 165730

165730

Parent Item: 646.9701

646 9701

Parent Item Name: Cutter Sub Assembly

Start Date: 9/22/2017

Required Date: 9/27/2017

Start Qty: 3.00

Required Qty: 3.00

MS21042L08

Purchased

No

110

Each

1,951.000

6

18

MS21042I 08

**

Nut

Location

Loc Qty

Loc Code

GA

94

m135978

94

OVER007

1600

m138333

1600

ST303

257

m138207

125

m138237

132

Monday, August 28, 2017 12:56:04 PM

Shop Packet Print

Page 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05360

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY J. BECKER

DATE: 03/24/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR

MFG

QC

EFF.

CURRENT ORDER

REASON: REVISED DIMENSIONS

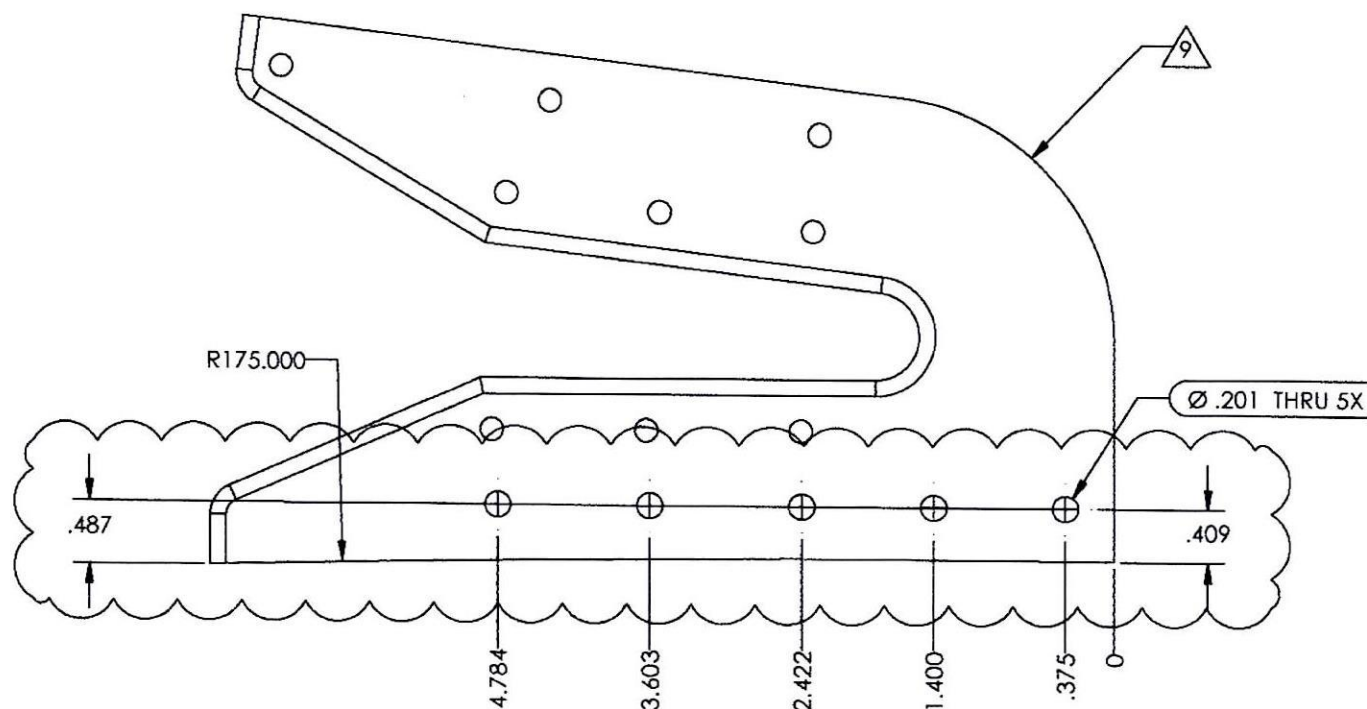
ECR:

N/A

ACTION ITEM:

1.

SHEET 7, ZONE C3 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 165730 MJS
1708-30

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

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APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR.

MFG

QC

EFF.

CURRENT ORDER

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

1.

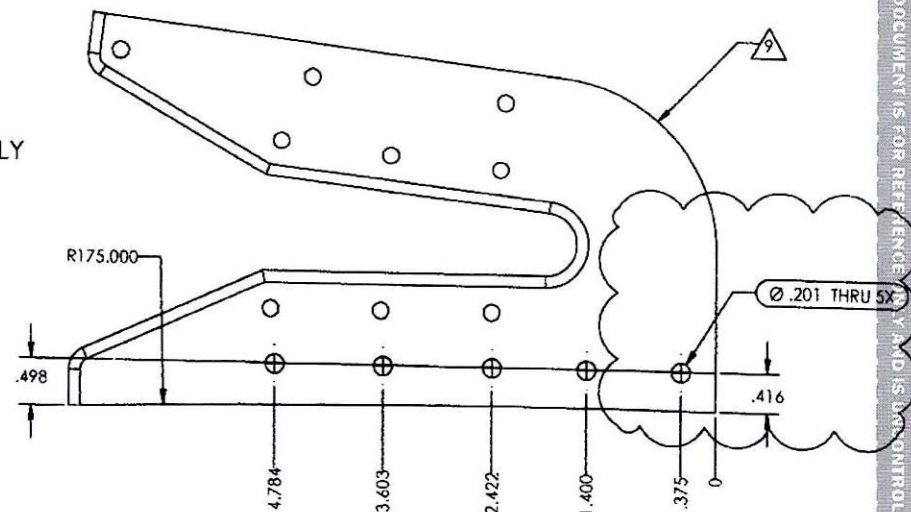
SHEET 1, ZONE A6 IS:

NOTES:

IS

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

SHEET 7, ZONE C5 IS:



DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

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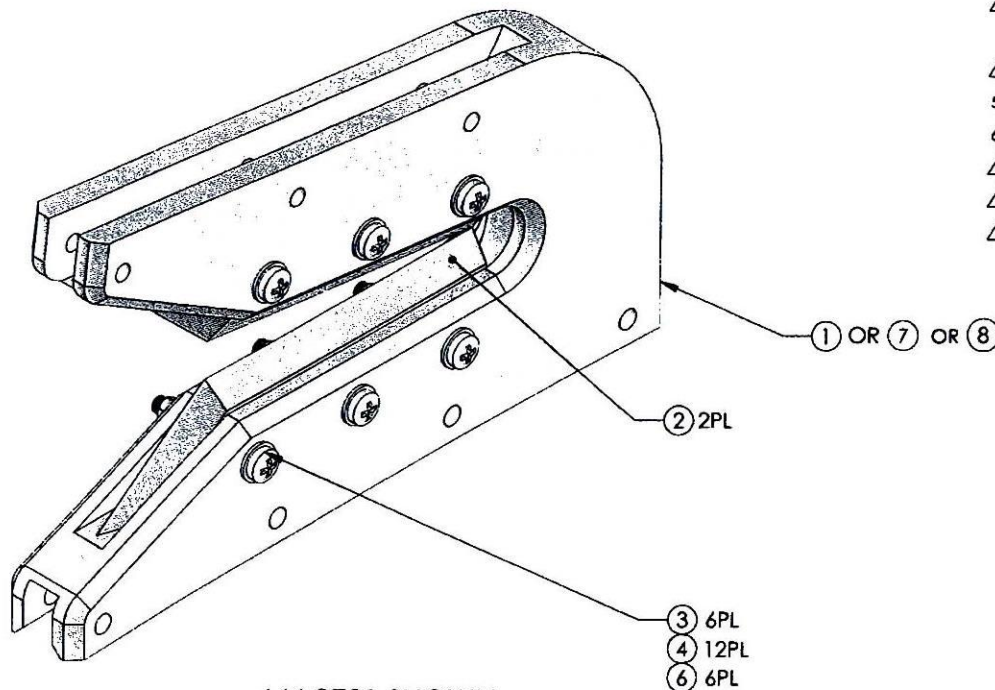
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE REVISION - P03		MJC
MC	RECALL RELEASE	03/29/09	P. BRAVO
A	INCORPORATED ECN 05744.03838 03912	06/06/13	P. BRAVO
B	INCORPORATED ECN 03917	07/03/13	P. BRAVO
C	INCORPORATED ECN 04039	08/07/13	P. BRAVO
D	INCORPORATED ECN 05329	07/26/14	P. BRAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



646.9701 SHOWN
646.9702 & 646.9703 TYP

UNINCORPORATED ECN(S)

05345, 05360,

1			8	646.9713	BODY		△	△	△
	1		7	646.9712	BODY		△	△	△
6	6	6	6	601.1541	LOCKNUT	MS21042LDB			
A/R	A/R	A/R	5	601.2045	RIV. LOCTITE 598				
12	12	12	4	601.2764	WASHER	MS1149FMSBP			
6	6	6	3	601.2765	SCREW	MS27039-0819			
2	2	2	2	646.9711	BLADE		△		△
			1	1	646.9710	BODY			△
X					646.9703	CUTTER SUB ASSY			
	X				646.9702	CUTTER SUB ASSY			
		X			646.9701	CUTTER SUB ASSY			
QTY	9702	9701	FIND #	PART #	DESCRIPTION	MATL	SPEC.		
PARTS LIST									
NEXT ASSY (S)					ORIGINAL DATE				
646.9600					DRAWN BY: CHLOE				
					E. ROSANO P. BRAVO				
					DRAWING APPROVAL				
					P. BRAVO				
					CONTRACT NO.				
					UNLESS OTHERWISE SPECIFIED				
					DIMENSIONS ARE IN INCHES				
					TOLERANCES ARE:				
					2 PLACE DECIMALS ±.01				
					3 PLACE DECIMALS ±.005				
					ANGLES ±.5°				
					SCALE: NONE				
					SHEET 1 OF 7				

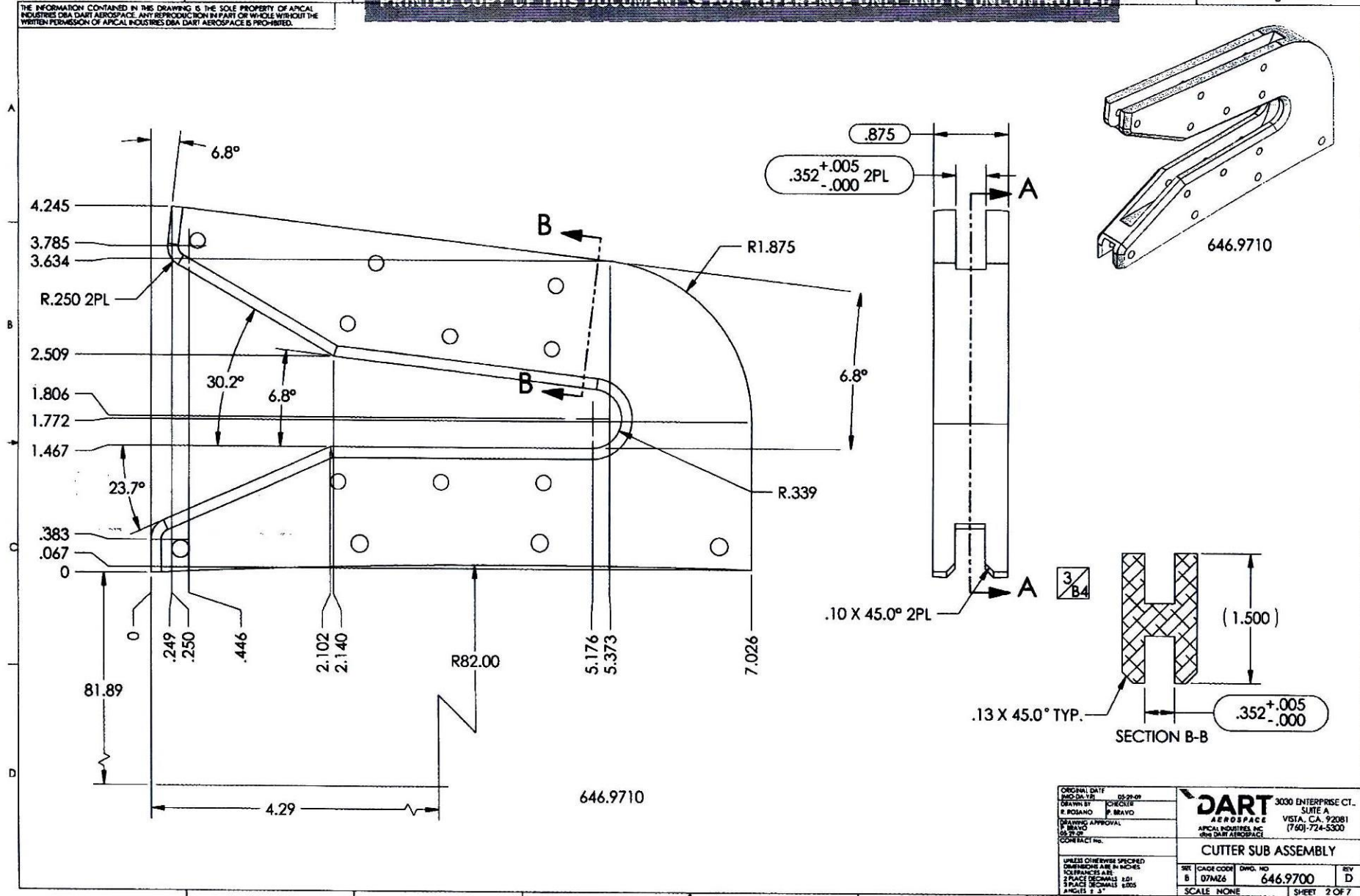
DART 3030 ENTERPRISE CT., SUITE A
VISTA, CA. 92081
APCAL INDUSTRIES, INC.
DBA DART AEROSPACE
(760)-724-5300

CUTTER SUB ASSEMBLY

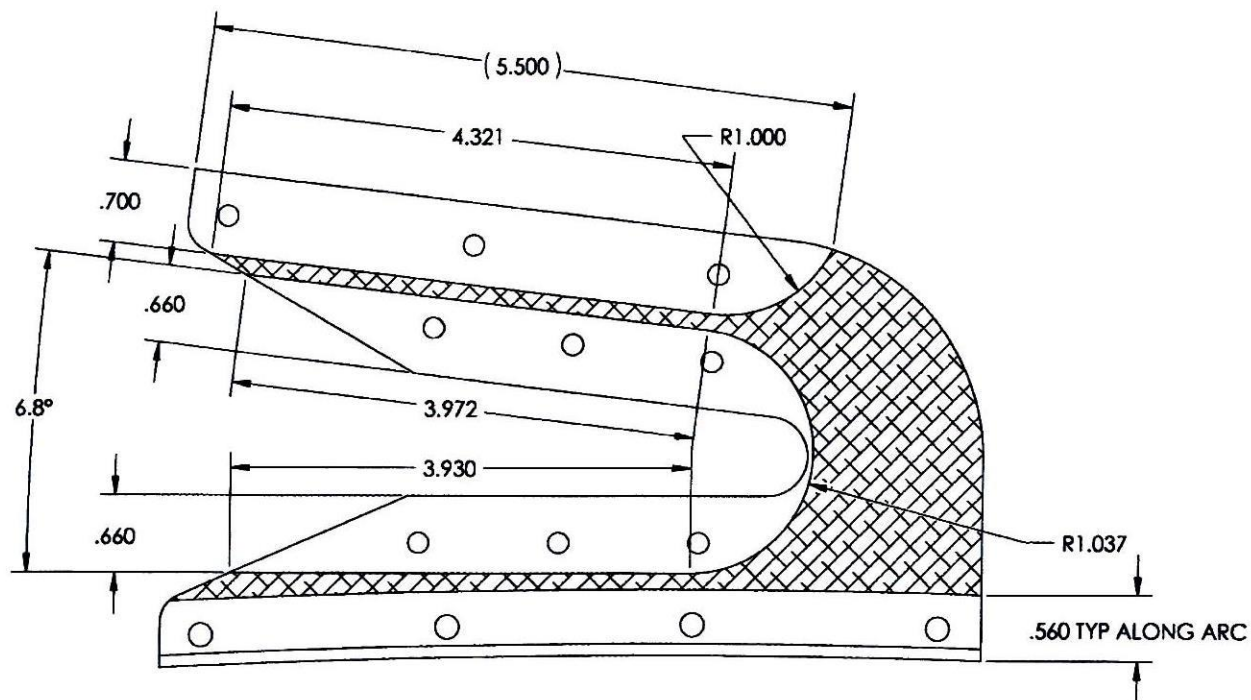
SHEET 1 OF 7

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SECTION A-A 

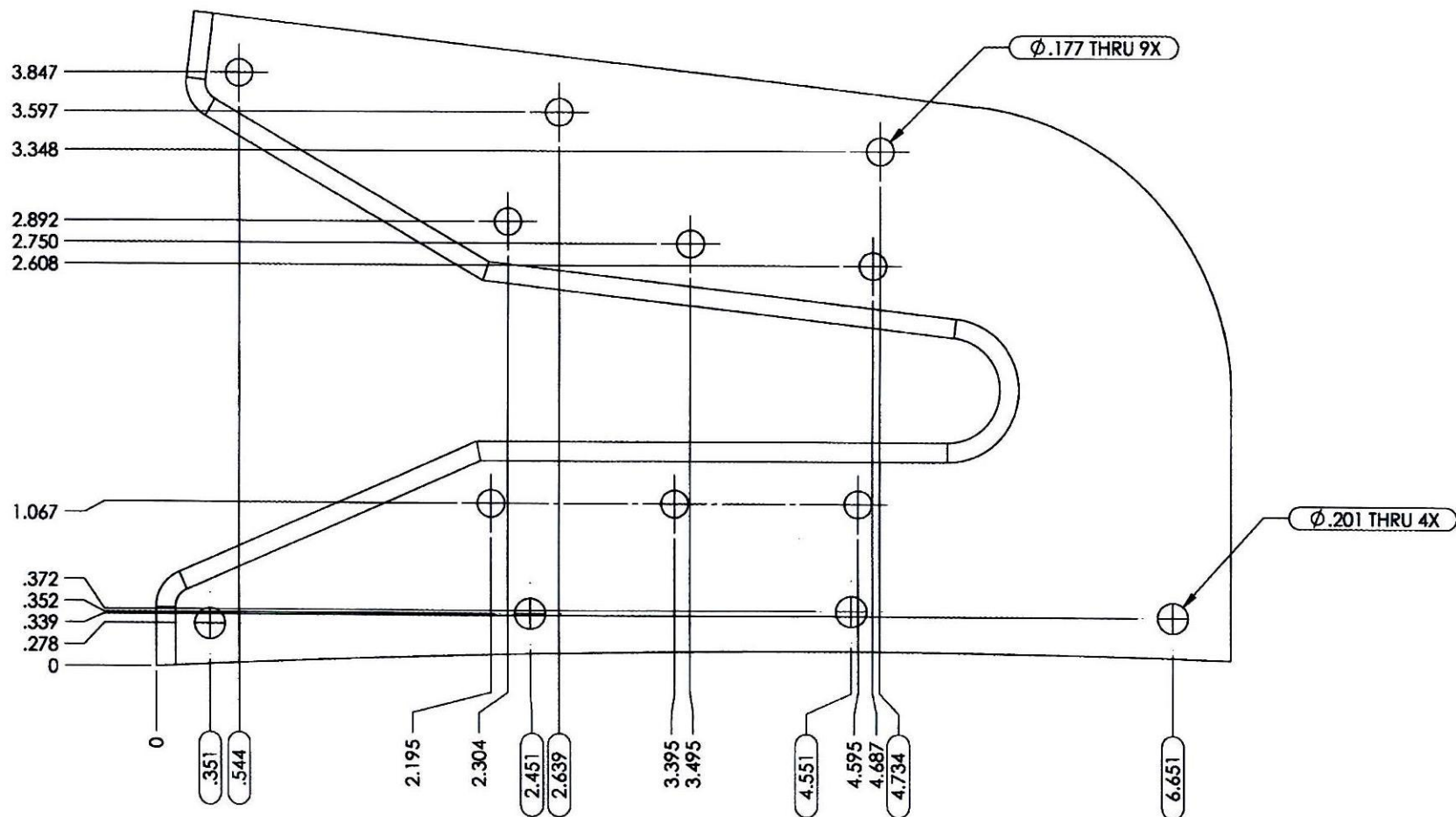
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ORIGINAL DATE (MM/DD-YY)	05-20-99	 DART AEROSPACE APCAL INDUSTRIAL INC. 2501 SHAW AVE.	3030 ENTERPRISE CT. SUITE A VISTA, CA 92081 (760) 724-5300	
DRAWN BY	CELESTER R. BORDANO			
DRAWING APPROVAL	BY P. BLAVO			
DATE OF COMPLET. OF TOL.				
CUTLER SUB ASSEMBLY				
UNITS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES 2 PLACES DECIMALS ±.01 3 PLACES DECIMALS ±.001 ANGLES ± .5°				
REV	DATE	BY	DESCRIPTION	REV
1	07/26/98	CELESTER	REVISED	1
SCALE		NONE		
DATE		07/26/98		
REV		3 OF 7		

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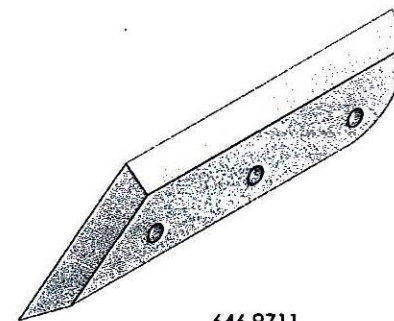
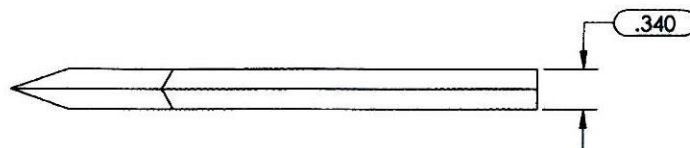


HOLE LOCATIONS +/- .002

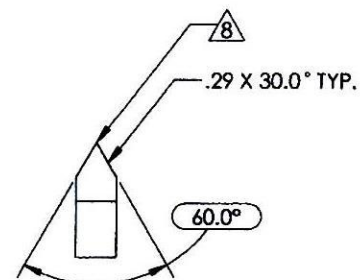
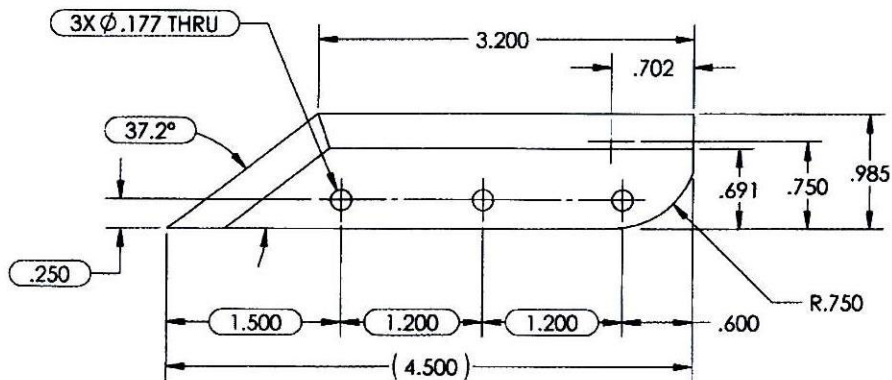
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ORIGINAL DATE	05-27-09	DART AEROSPACE APCAL INDUSTRIES, INC. DBA DART AEROSPACE	3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY	J. ROY			
CHECKED BY	P. MAYO			
APPROVED BY	P. MAYO			
CONTRACT NO.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°				
REV	CAGE CODE	DWG NO.	REV	
8	07M26	646.9700	D	
SCALE NONE		SHEET 4 OF 7		

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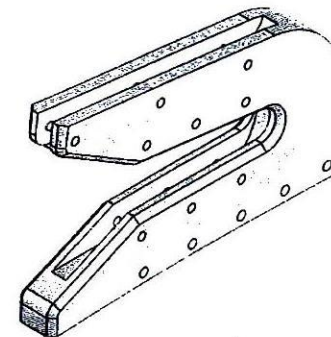
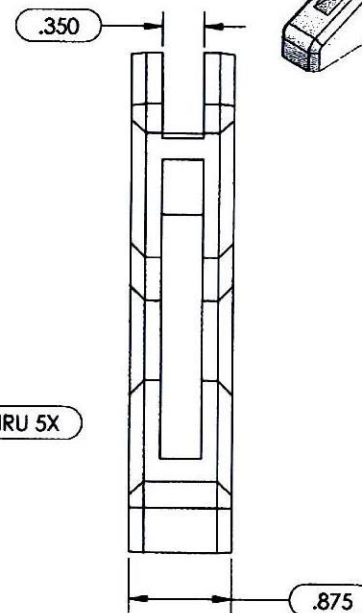
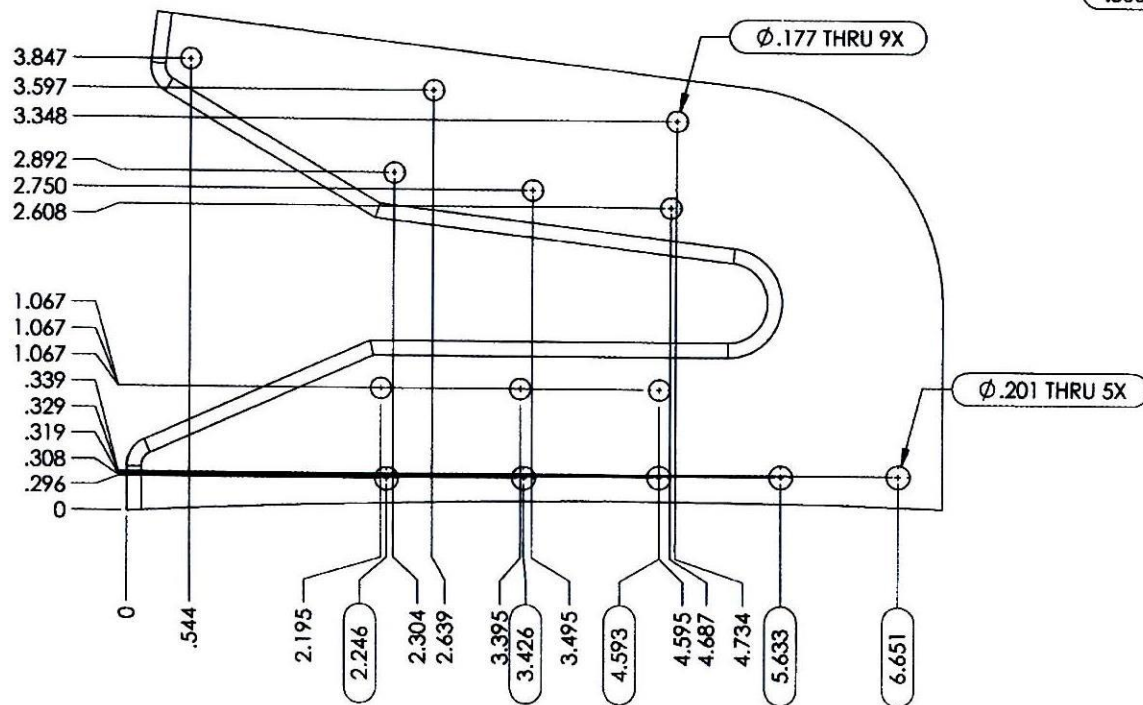
ORIGINAL DATE: 02-27-09		INDICATOR: 02-27-09	
DRAWN BY: CHOCER		CHECKED BY: BRAVO	
DESIGNED BY: BRAVO		APPROVED BY: BRAVO	
CONTRACT NO:		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.		UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.	
TOLERANCES ARE:		TOLERANCES ARE:	
3 PLACES DECIMALS ±.01		3 PLACES DECIMALS ±.01	
ANGLES: 1/2°		ANGLES: 1/2°	
SIZE: B	CAGE CODE: 07M26	QWC. NO.: 646.9700	REV. D
SCALE: NONE		SHEET: 5 OF 7	

DART AEROSPACE
3030 ENTERPRISE CT., SUITE A
VISTA, CA. 92081
(760)-724-5300
APICAL INDUSTRIES INC.
DBA DART AEROSPACE

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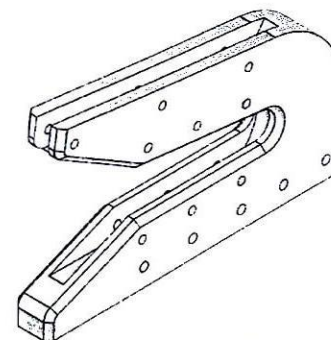
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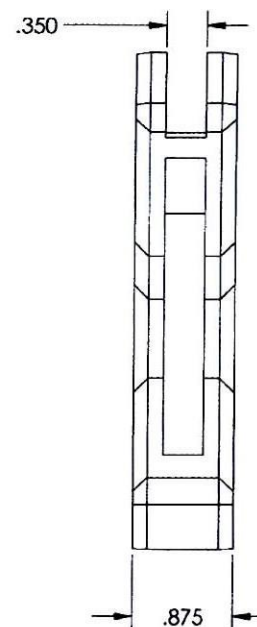
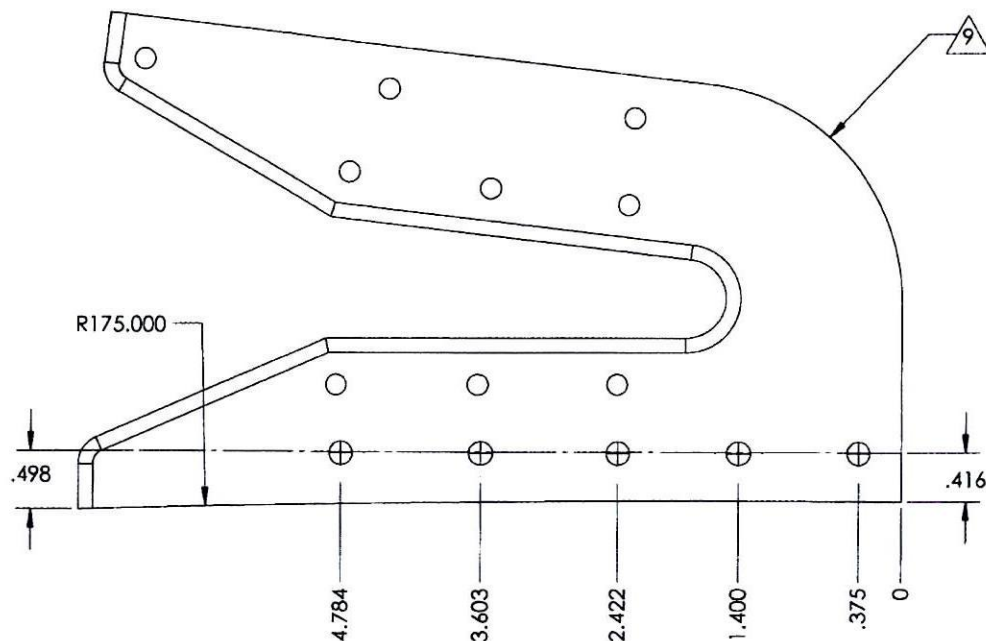
ORIGINAL DATE 06-29-09	3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760) 724-5300
DRAWN BY R. ROSANO	APICAL INDUSTRIES, INC. DBA DART AEROSPACE
CHECKED BY P. BRAVO	
DESIGNED BY P. BRAVO	
CONTRACT NO.	
CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .001 2 PLACE DECIMALS .005 ANGLES .5°	REV. NO. 646.9700 D
REV. 8 07/02/06	SCALE NONE 1 SHEET 6 OF 7

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ORIGINAL DATE 05-29-09	DART 3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY P. ROSANO	APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DESIGNED BY P. ROSANO	CUTTER SUB ASSEMBLY	
DATE 05-29-09	REV D	
CONTRACT NO.	SCALE NONE	SHEET 7 OF 7
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 ANGLES ±.5°		